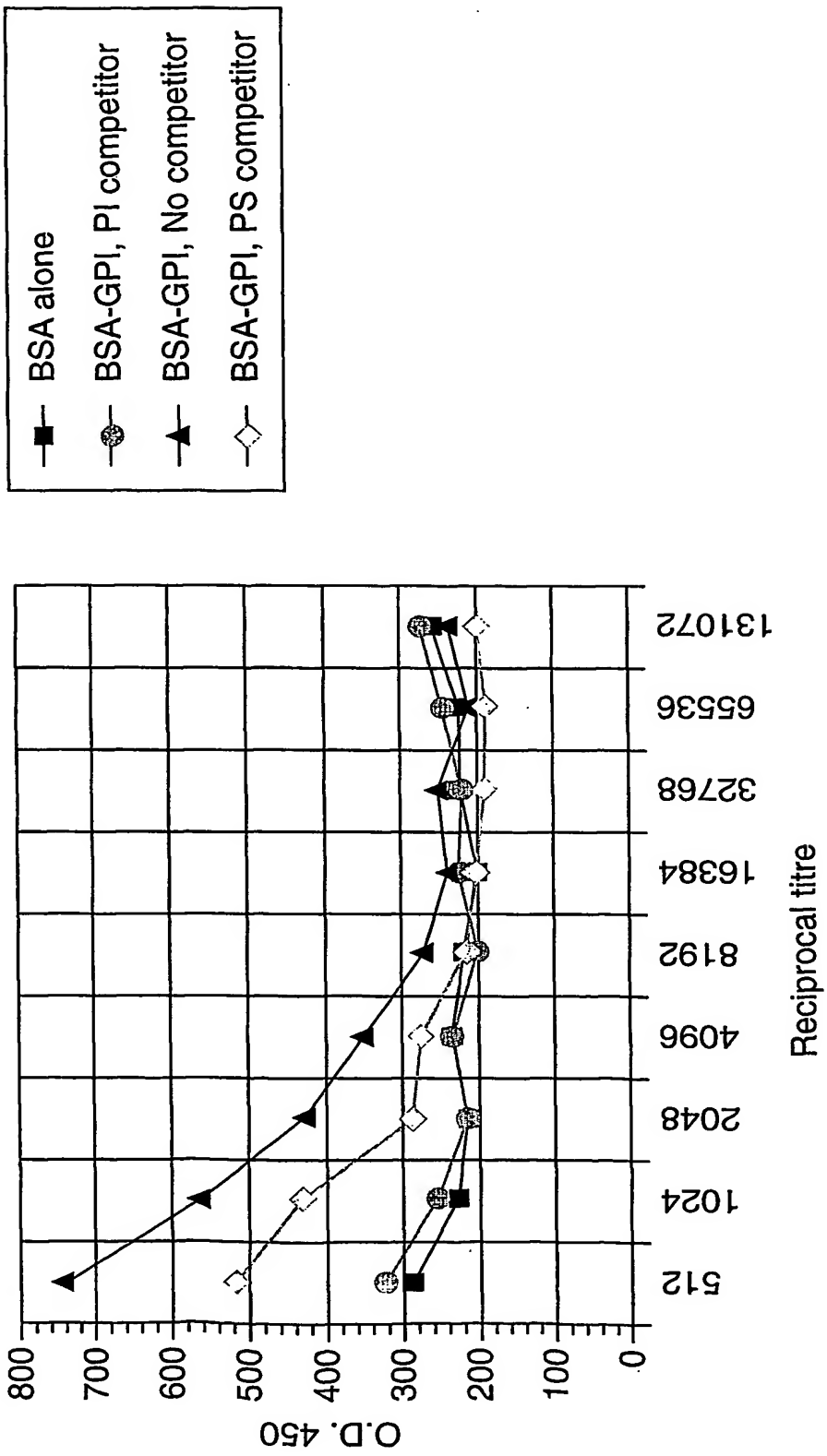

BSA alone
BSA-GPI, PI competitor
BSA-GPI, No competitor
BSA-GPI, PS competitor
O.D. 450
800
700
600
500
400
300
200
100
0
512
1024
2048
4096
8192
16384
32768
65536
131072
Reciprocal titre

Figure 1

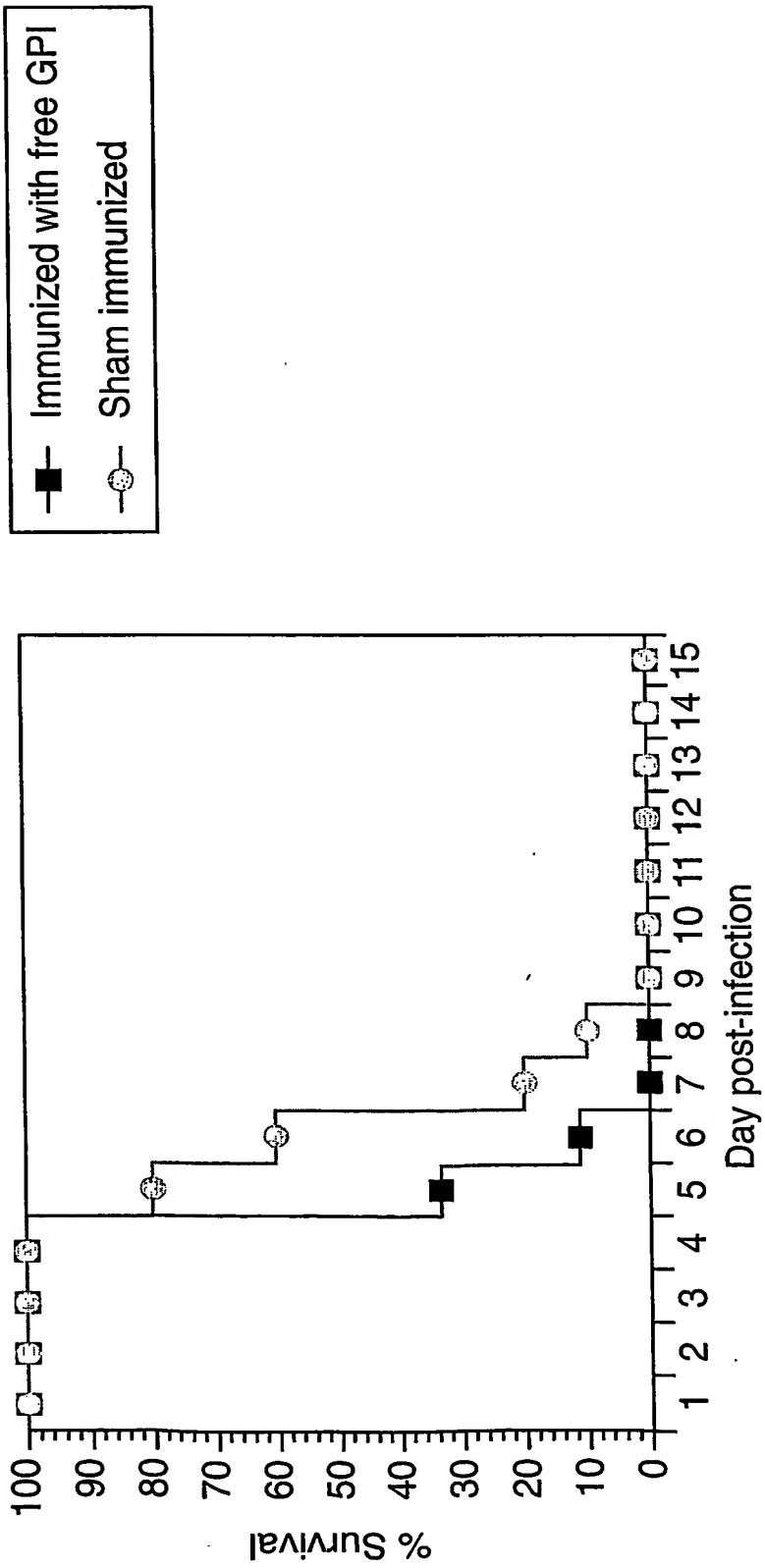

Immunized with free GPI
Sham immunized
% Survival
100
90
80
70
60
50
40
30
20
10
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
Day post-infection

Figure 2

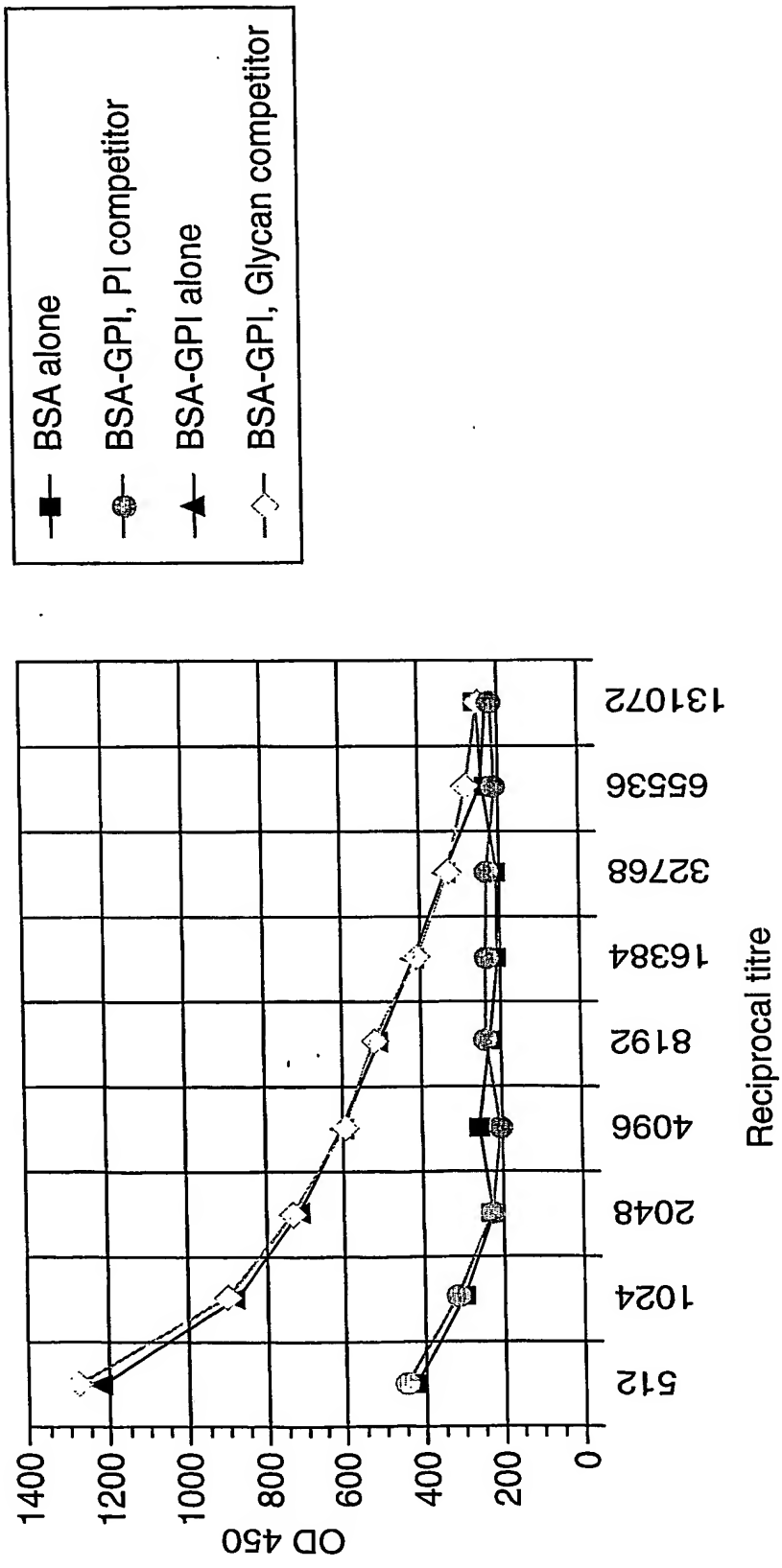

BSA alone
BSA-GPI, PI competitor
BSA-GPI alone
BSA-GPI, Glycan competitor
OD 450
0
200
400
600
800
1000
1200
1400
512
1024
2048
4096
8192
16384
32768
65536
131072
Reciprocal titre

Figure 3

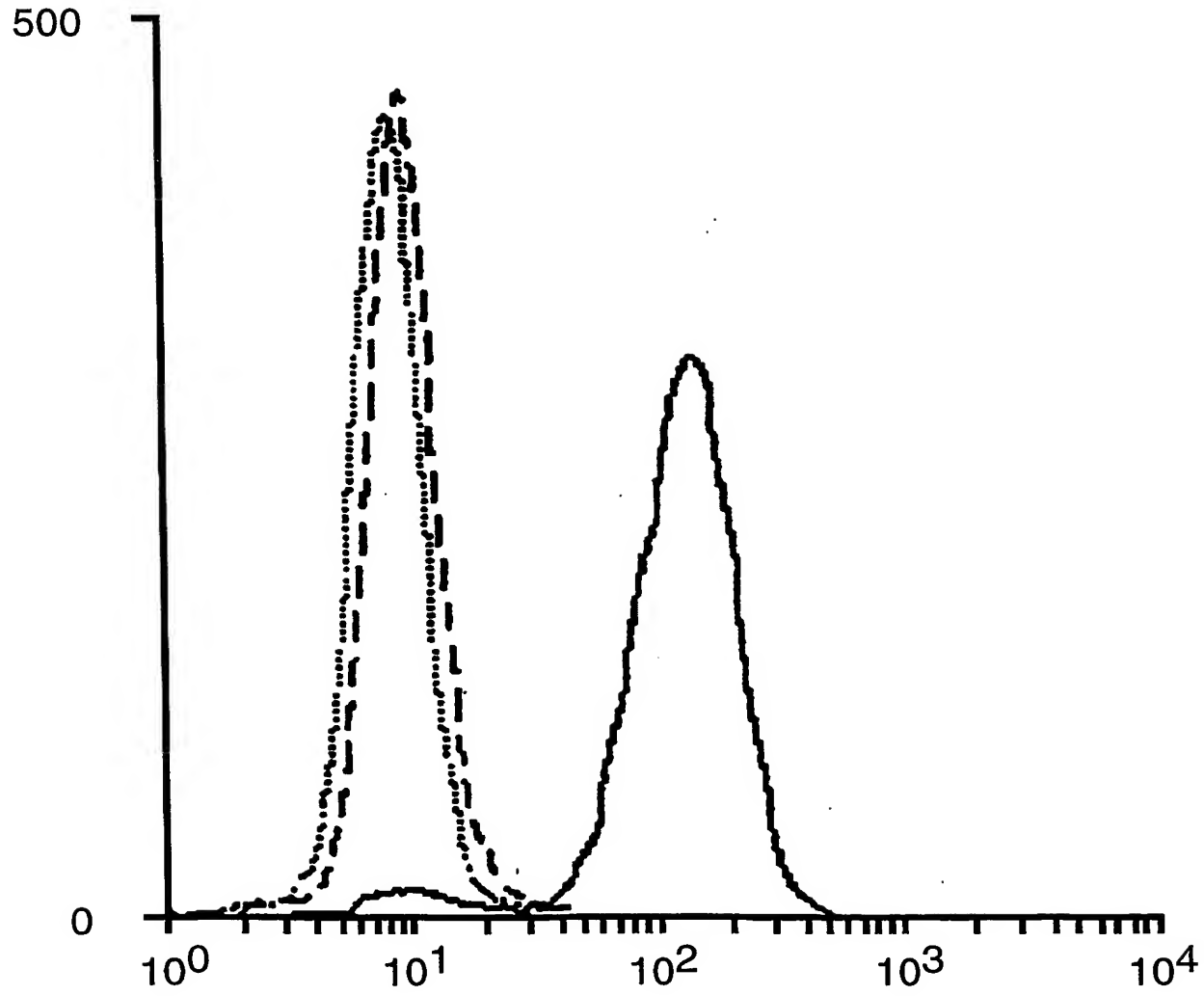


Figure 4

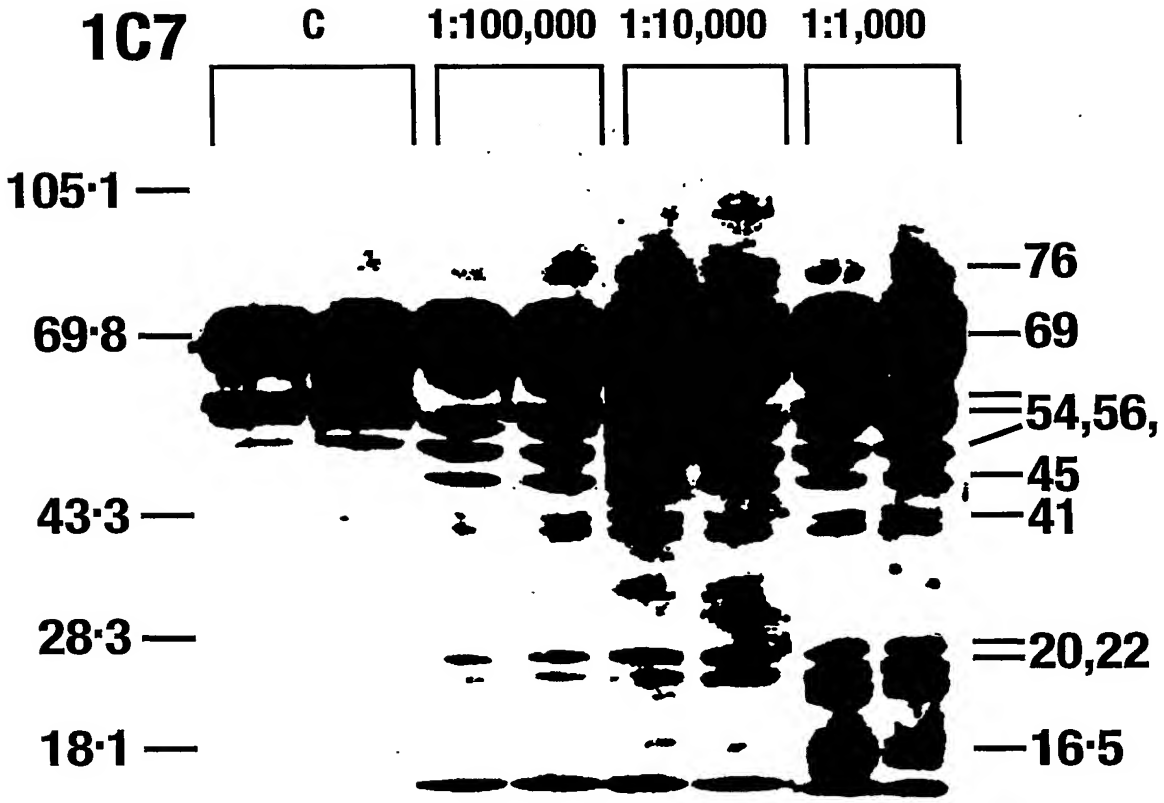

1C7
C
1:100,000
1:10,000
1:1,000
105·1
69·8
43·3
28·3
18·1
76
69
54,56,
45
41
20,22
16·5

Figure 5

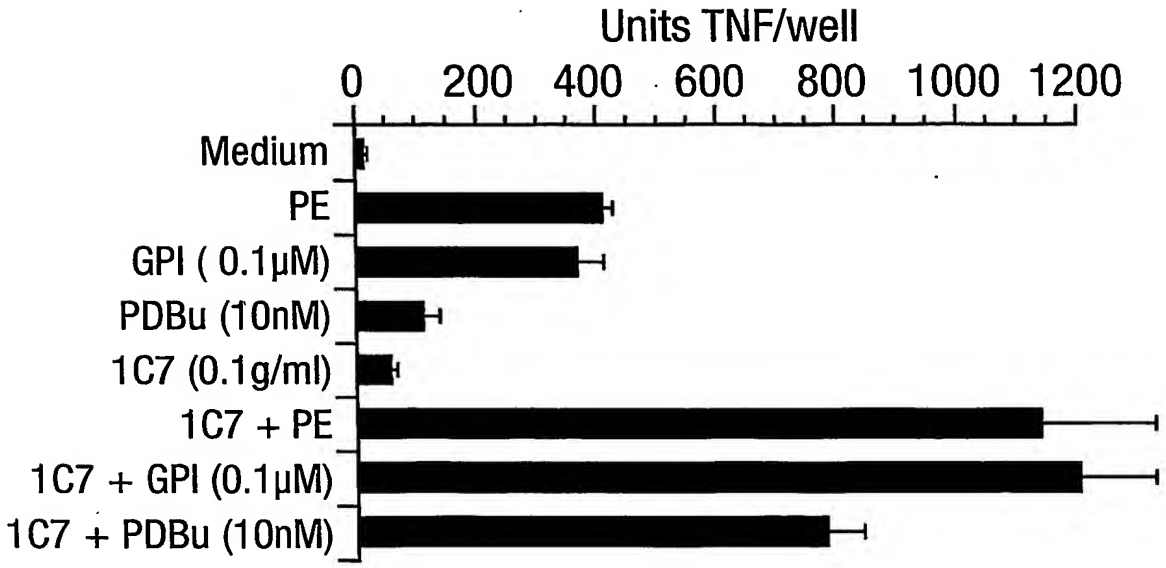

Units TNF/well
0
200
400
600
800
1000
1200
Medium
PE
GPI (0.1μM)
PDBu (10nM)
1C7 (0.1g/ml)
1C7 + PE
1C7 + GPI (0.1μM)
1C7 + PDBu (10nM)

Figure 6

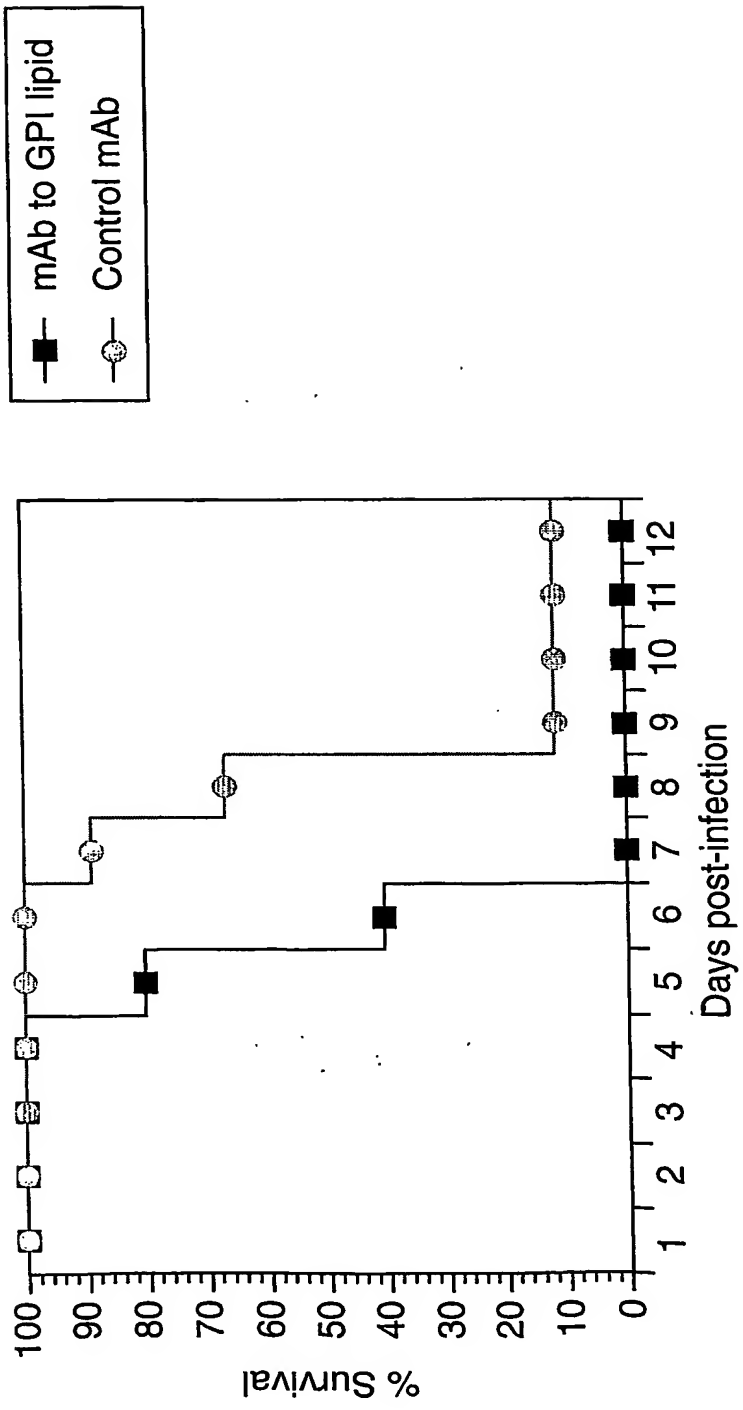

mAb to GPI lipid
Control mAb
% Survival
100
90
80
70
60
50
40
30
20
10
0
1
2
3
4
5
6
7
8
9
10
11
12
Days post-infection

Figure 7

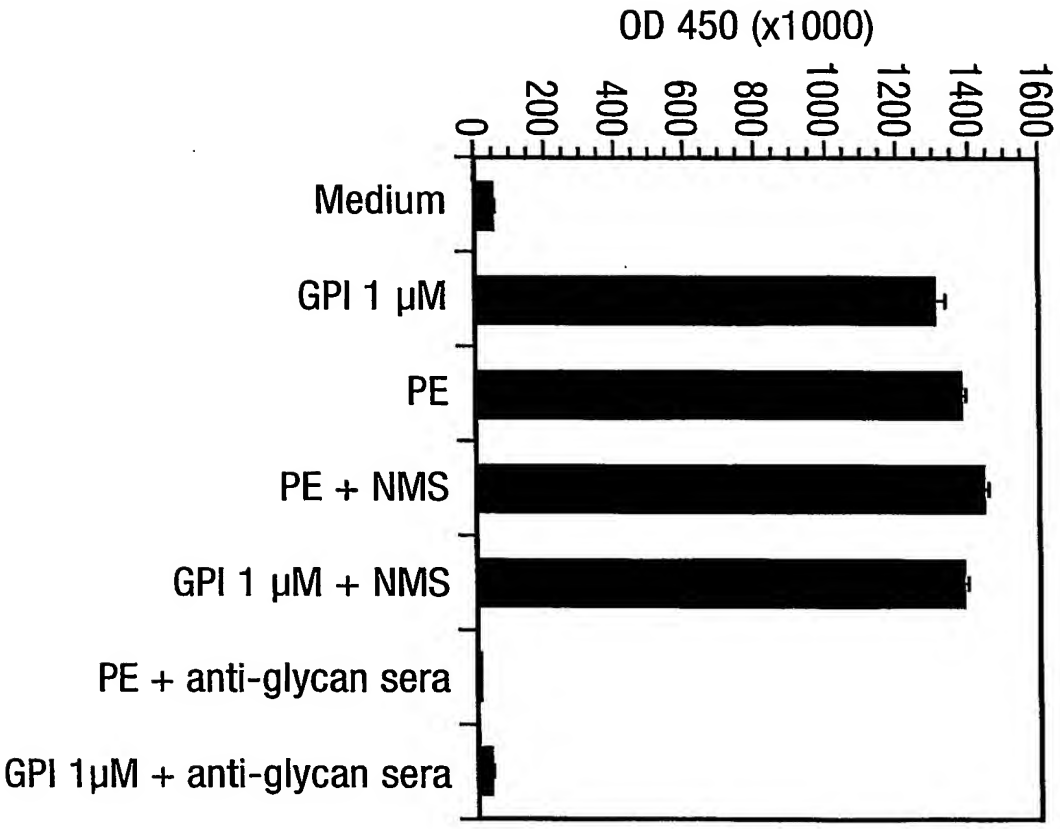

OD 450 (x1000)
0
200
400
600
800
1000
1200
1400
1600
Medium
GPI 1 µM
PE
PE + NMS
GPI 1 µM + NMS
PE + anti-glycan sera
GPI 1µM + anti-glycan sera

Figure 8

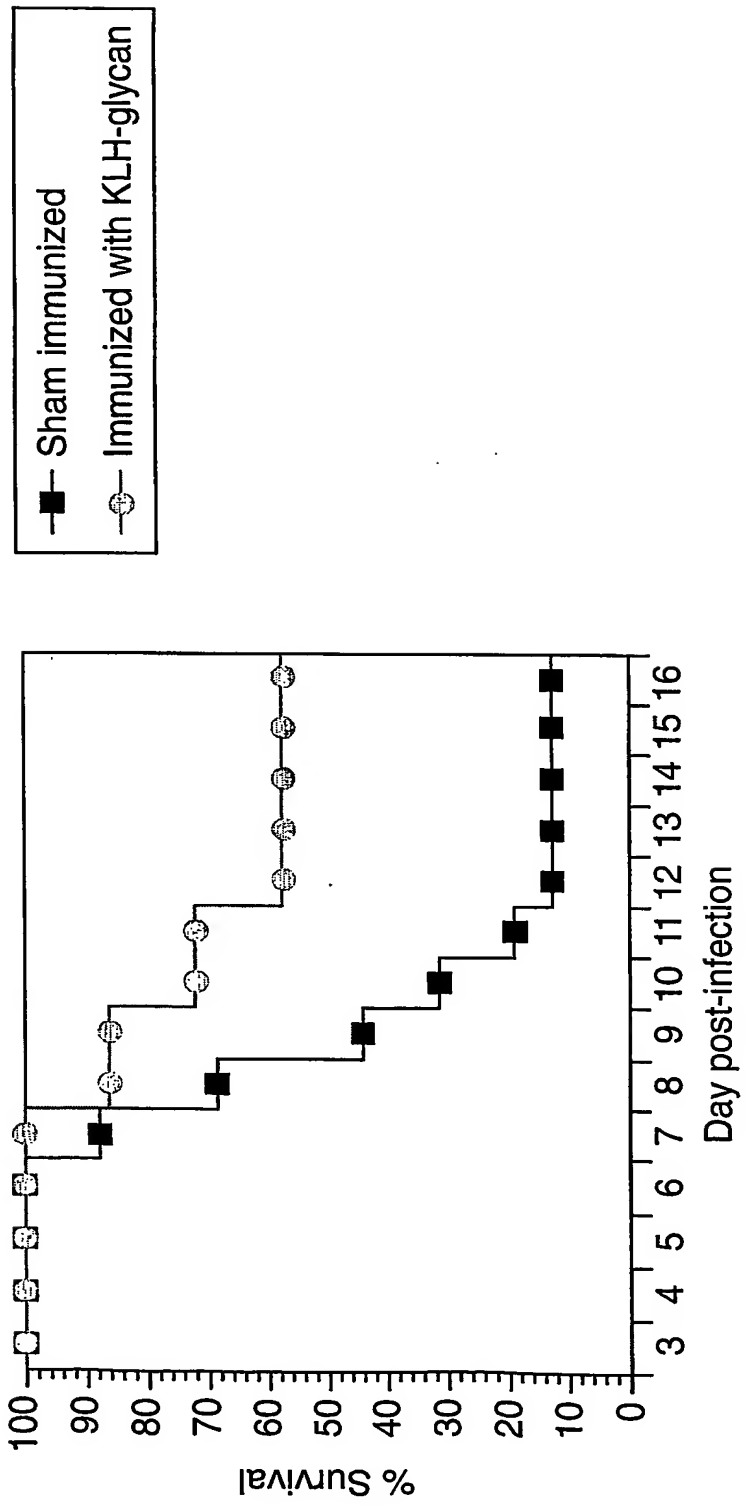

Sham immunized
Immunized with KLH-glycan
% Survival
100
90
80
70
60
50
40
30
20
10
0
3 4 5 6 7 8 9 10 11 12 13 14 15 16
Day post-infection

Figure 9

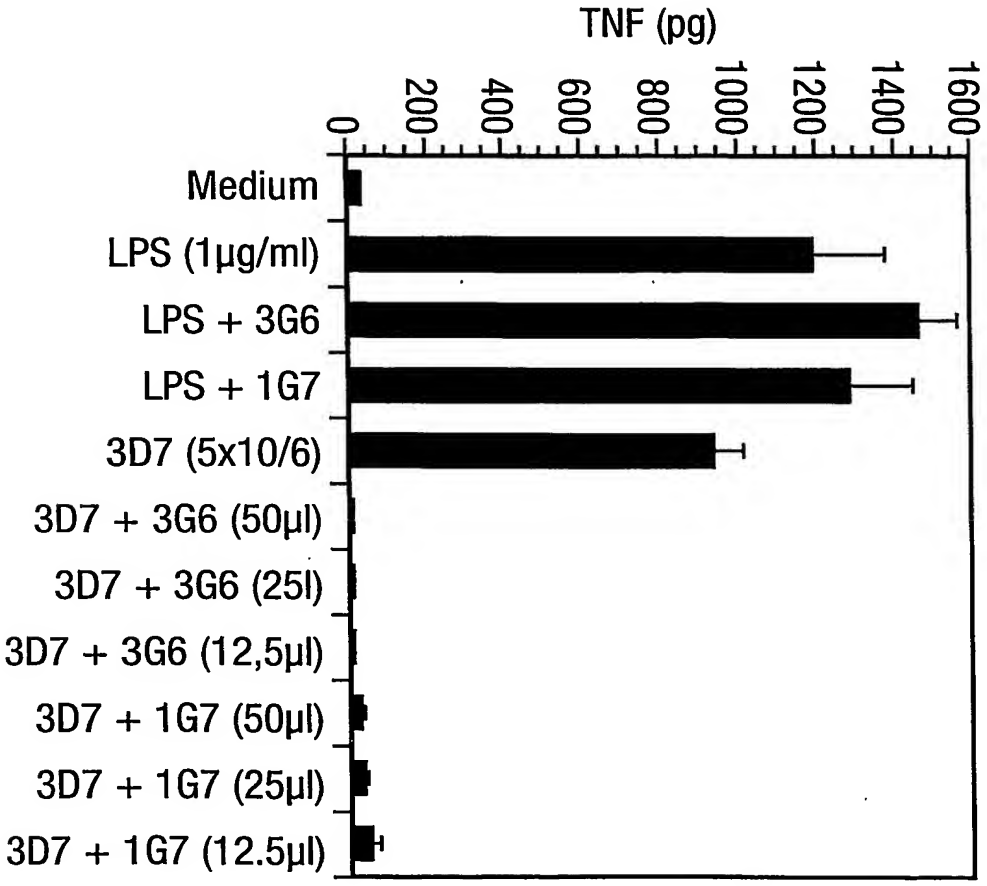

TNF (pg)
0
200
400
600
800
1000
1200
1400
1600
Medium
LPS (1µg/ml)
LPS + 3G6
LPS + 1G7
3D7 (5x10/6)
3D7 + 3G6 (50µl)
3D7 + 3G6 (25l)
3D7 + 3G6 (12,5µl)
3D7 + 1G7 (50µl)
3D7 + 1G7 (25µl)
3D7 + 1G7 (12.5µl)

Figure 10

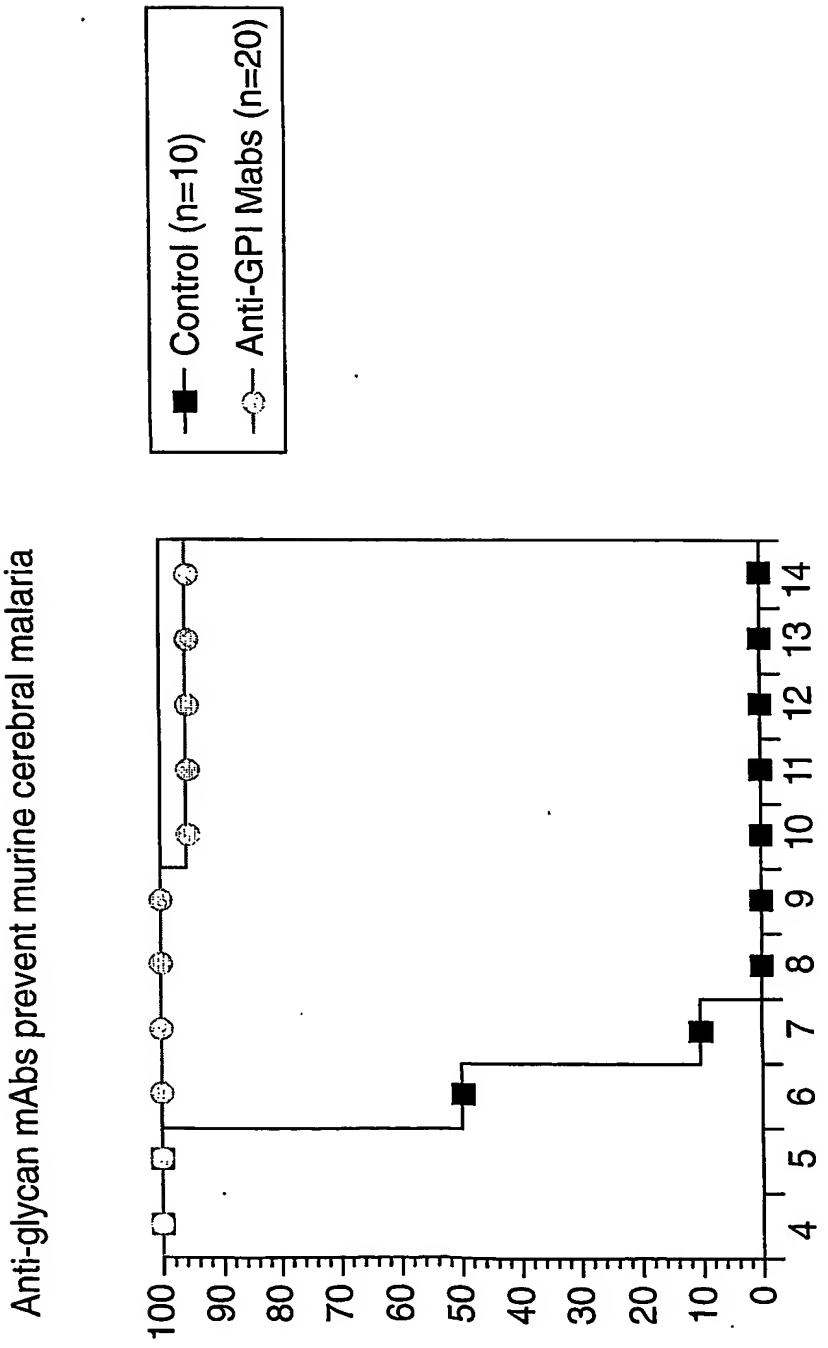

Anti-glycan mAbs prevent murine cerebral malaria
Control (n=10)
Anti-GPI Mabs (n=20)
100
90
80
70
60
50
40
30
20
10
0
4
5
6
7
8
9
10
11
12
13
14

Figure 11

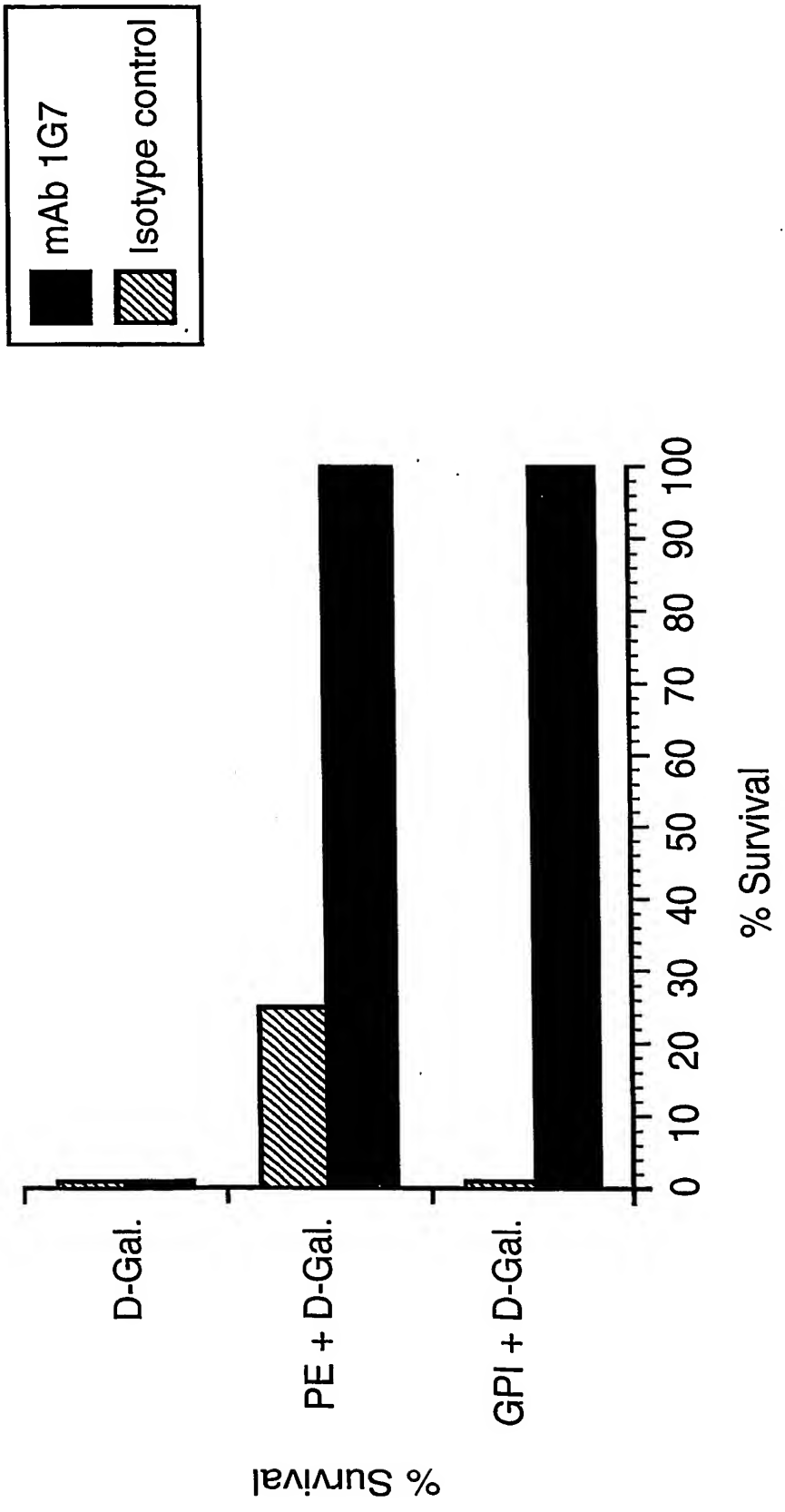

mAb 1G7
Isotype control
% Survival
0 10 20 30 40 50 60 70 80 90 100
D-Gal.
PE + D-Gal.
GPI + D-Gal.
% Survival

Figure 12

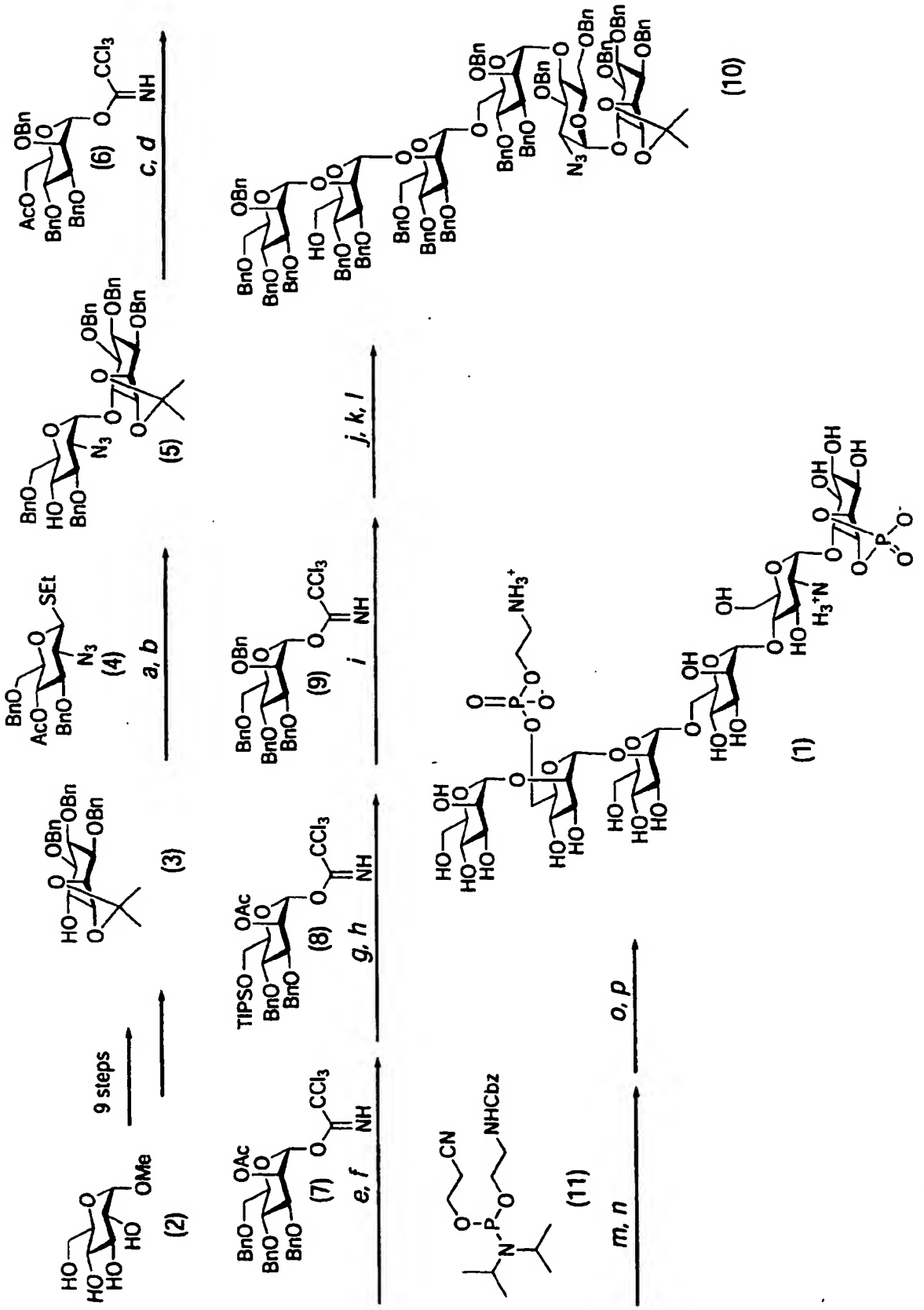


Figure 13

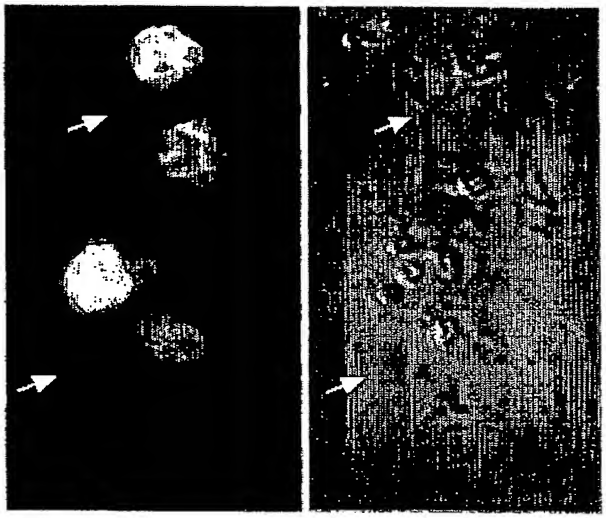


Figure 14a

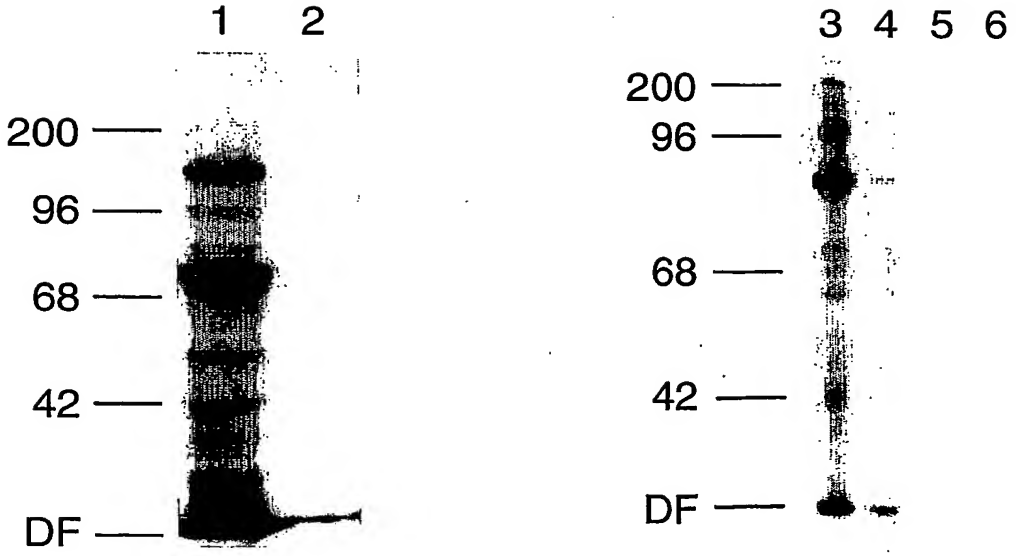


Figure 14b

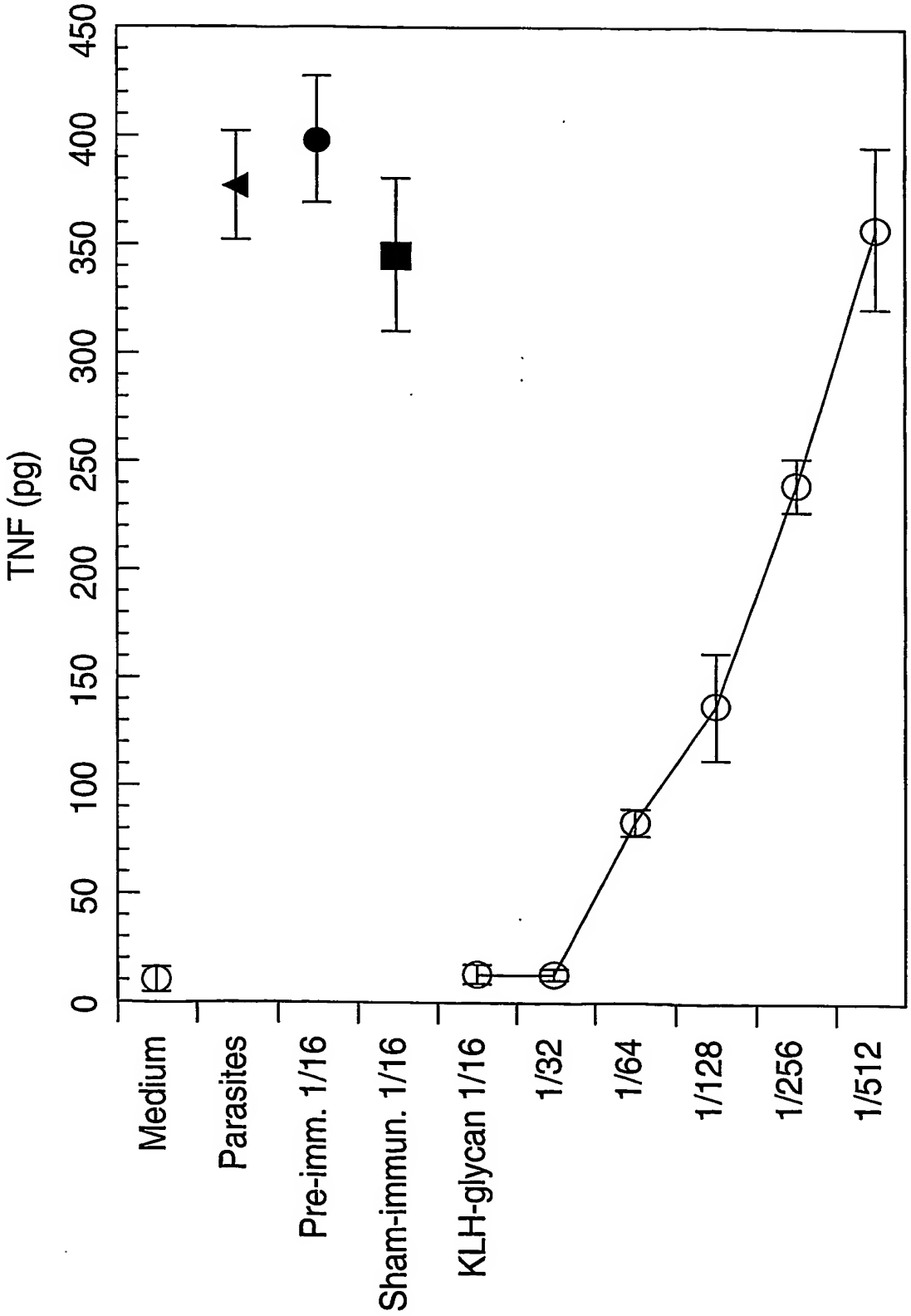

TNF (pg)
0
50
100
150
200
250
300
350
400
450
Medium
Parasites
Pre-imm. 1/16
Sham-immun. 1/16
KLH-glycan 1/16
1/32
1/64
1/128
1/256
1/512

Figure 14

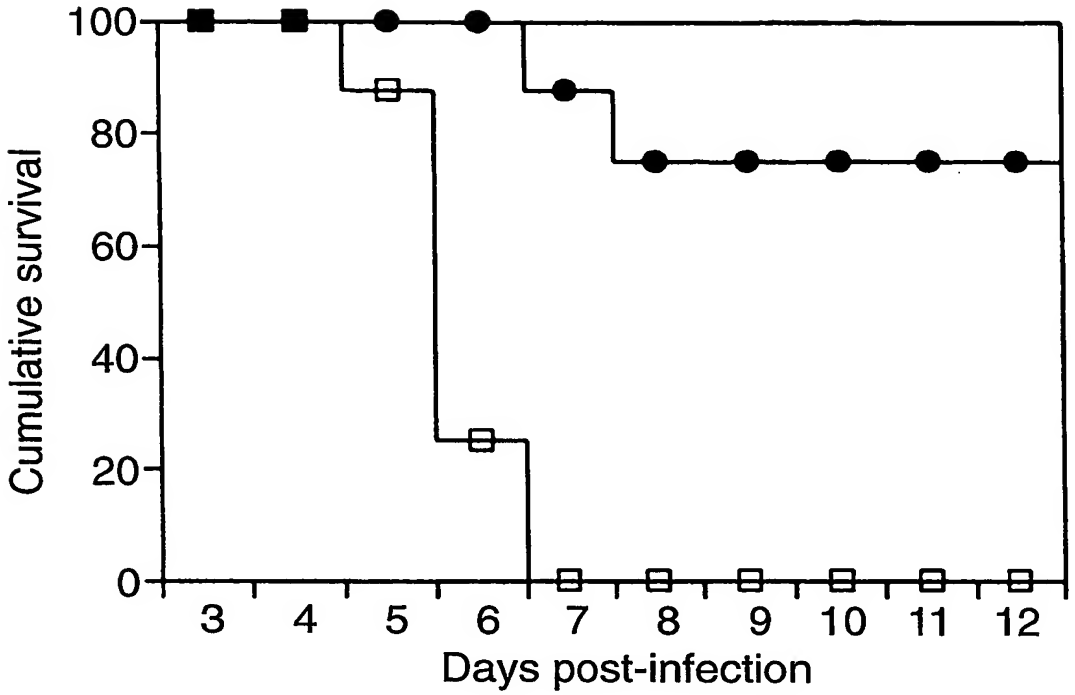


Figure 15a

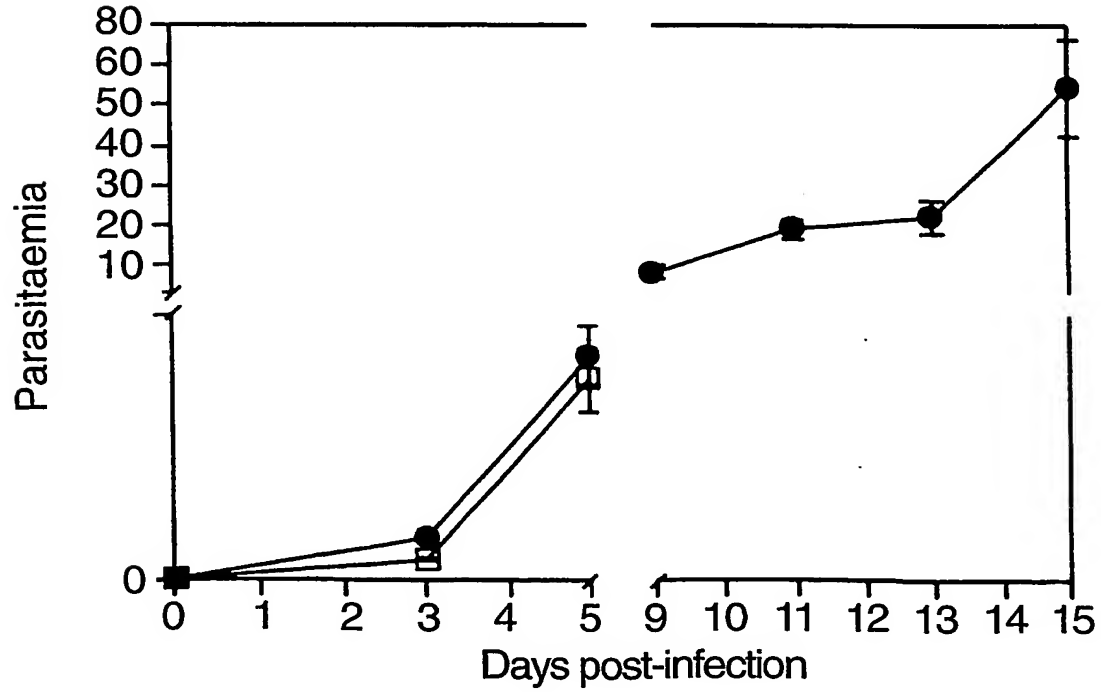


Figure 15b

Figure 15c

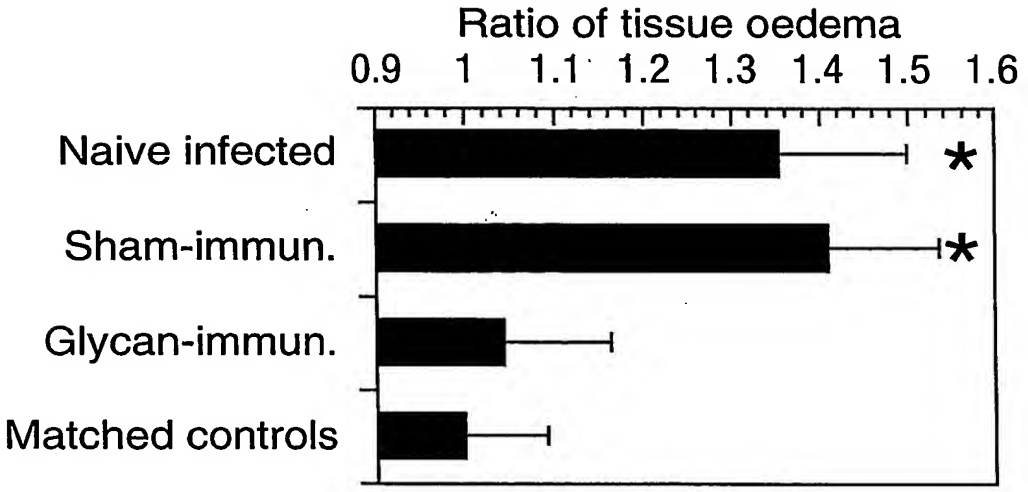


Figure 15 d

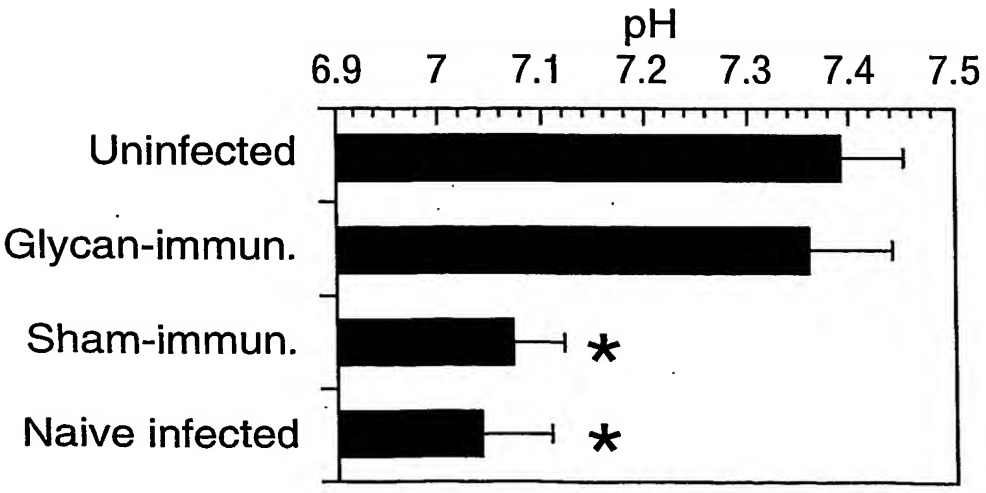


Figure 15 e

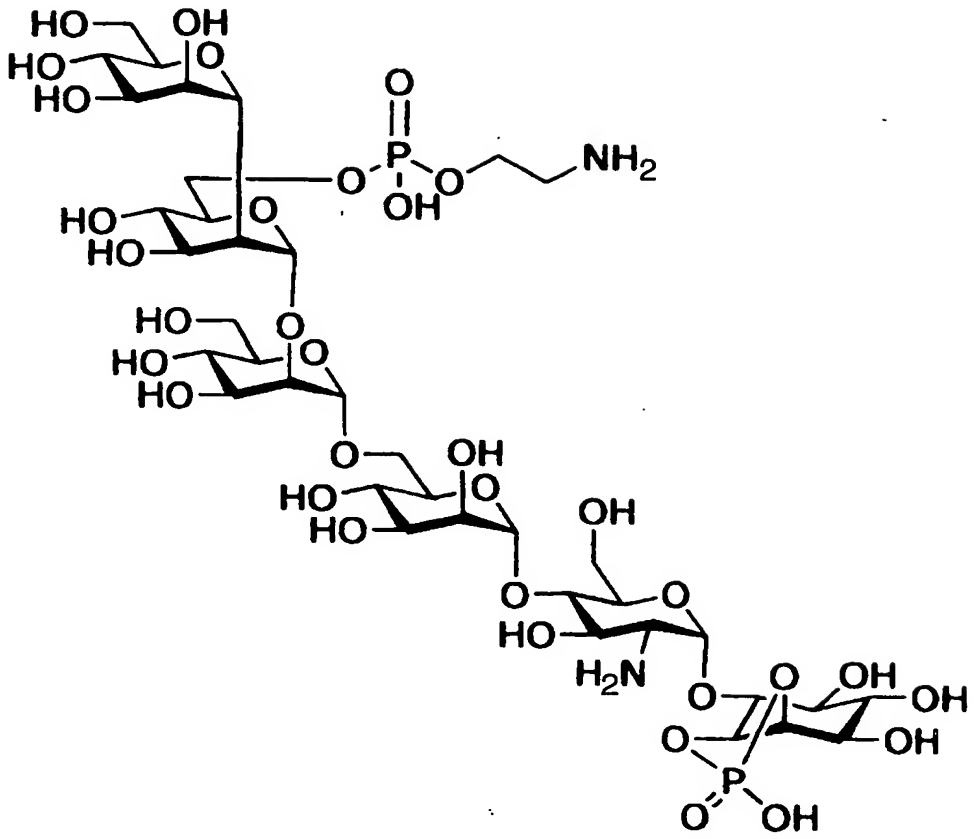

HO
OH
HO
HO
O
O
P
O
NH2
OH
HO
HO
O
HO
HO
O
O
OH
HO
HO
O
OH
HO
O
O
HO
H2N
O
O
OH
OH
O
P
O
OH

Figure 16

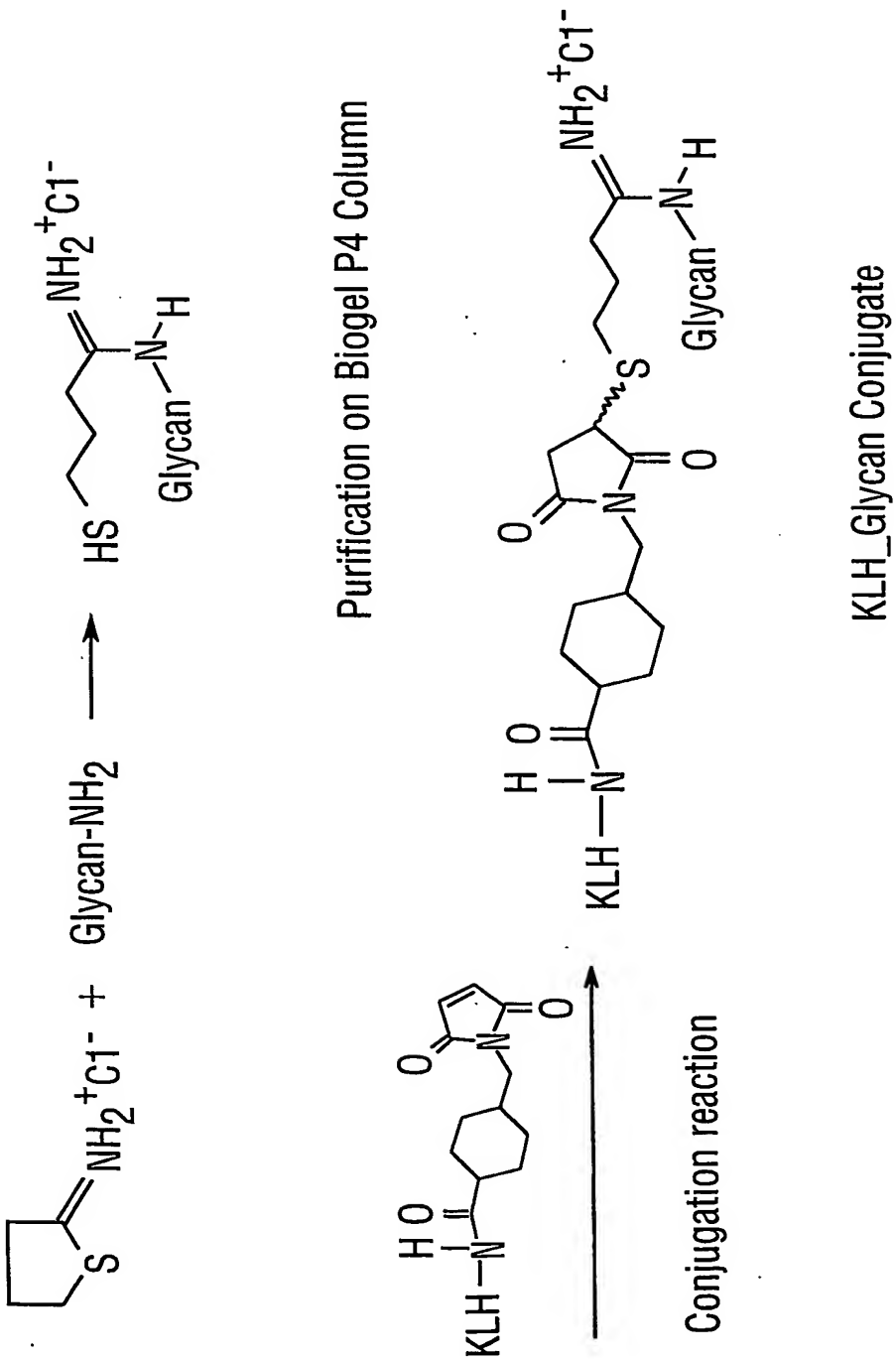

Glycan-NH2
HS
Glycan
Purification on Biogel P4 Column
KLH
Conjugation reaction
KLH_Glycan Conjugate

Figure 17

Protein	MW	Maleimide groups	Conjugation Ratio	Glycan (ng / ug)
OVA	45 000	8 moles per mole OVA	3 : 1 (molar)	84
KLH	8 000 000	479 moles per mole KLH	191 : 1 (molar)	28
BSA	67 000	17 moles per mole BSA	NA	-

Figure 18

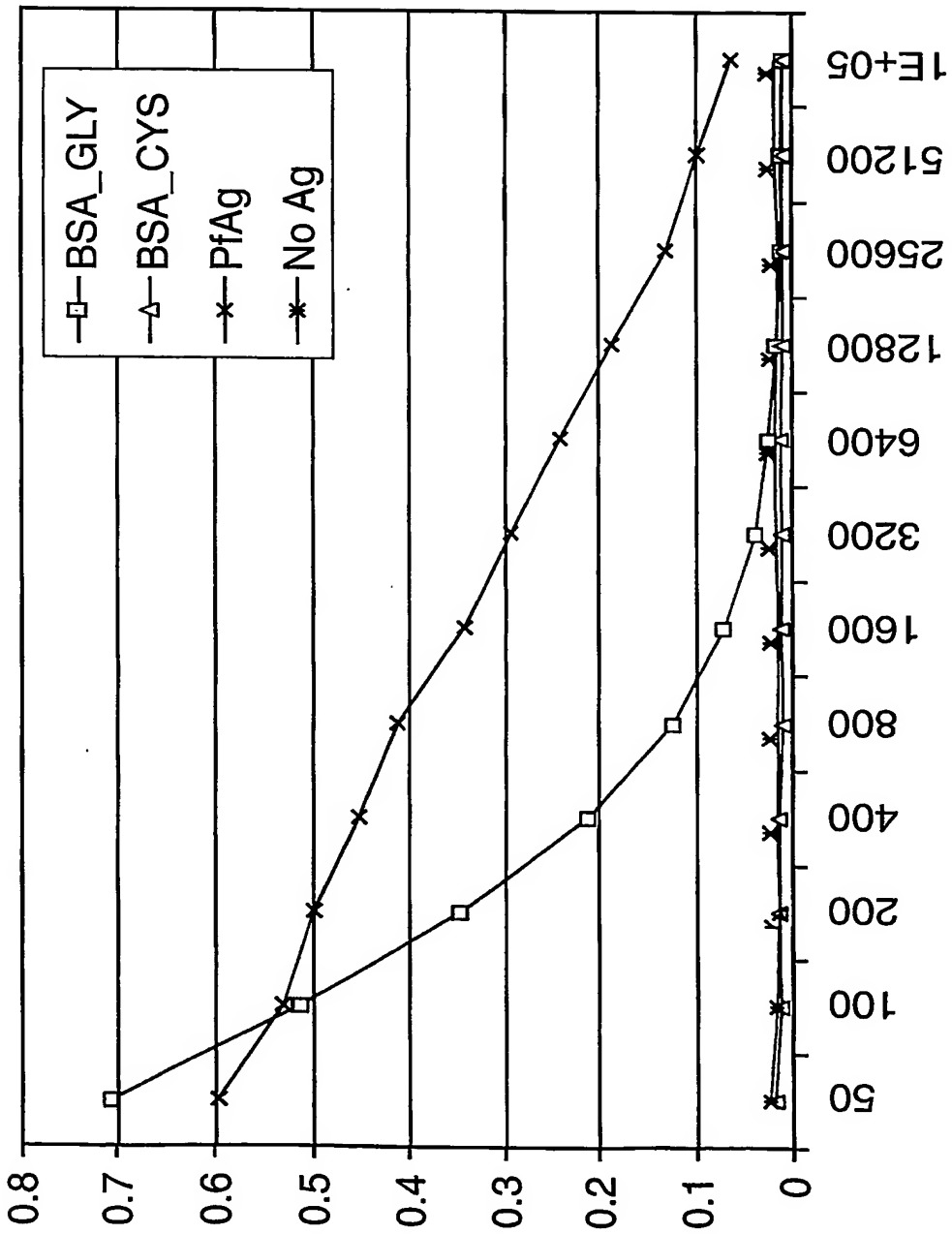

BSA_GLY
BSA_CYS
PfAg
No Ag
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
50
100
200
400
800
1600
3200
6400
12800
25600
51200
1E+05
Reciprocal Dilution

Figure 19

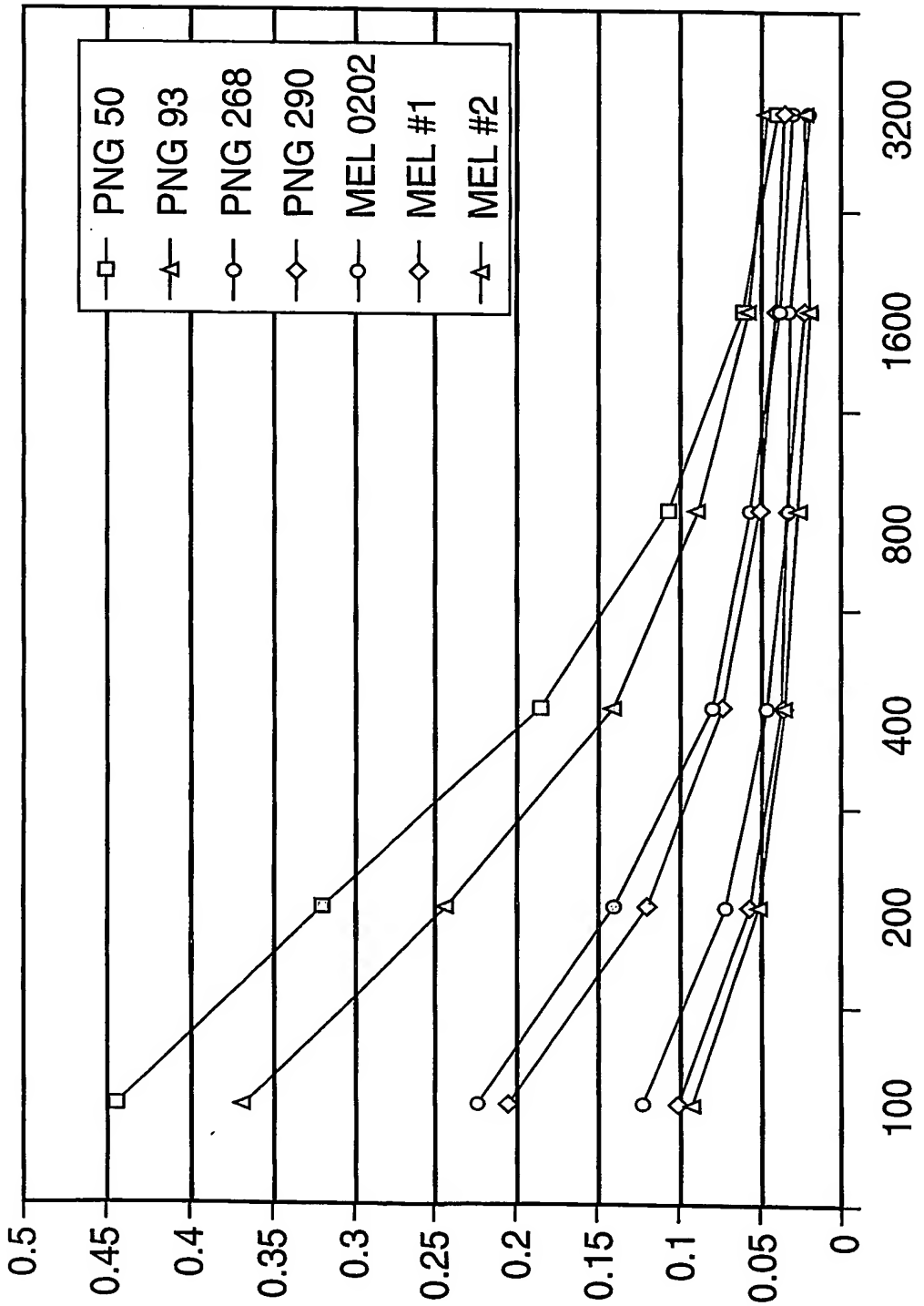
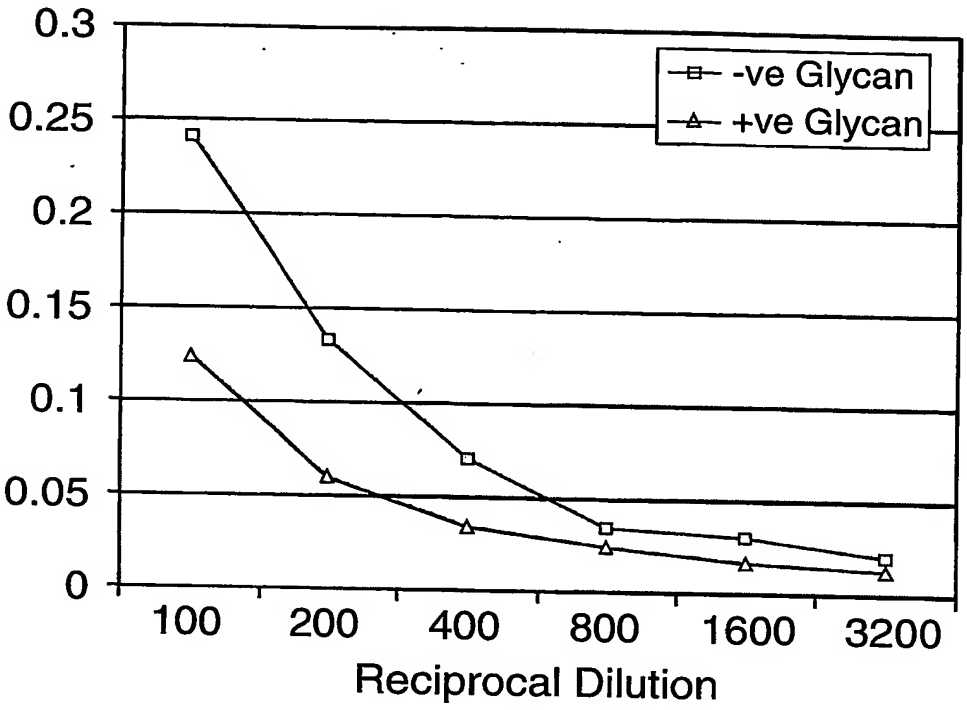

PNG 50
PNG 93
PNG 268
PNG 290
MEL 0202
MEL #1
MEL #2
0.5
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
100
200
400
800
1600
3200
Reciprocal Dilution

Figure 20



Molar Excess Synthetic Glycan	Percentage reduction
0	0
25	76
50	89
100	95

Figure 21

NH_2-CH_2-CH_2-PO_4-(Manα1-2) 6Manα1-2 Manα1-6Manα1-4GlcNH_2-6*myo*-inositol-1,2 cyclic-phosphate

or derivative or equivalent thereof.

43. An antibody directed to a synthetic GPI inositolglycan domain but which antibody is substantially incapable of interacting with the lipidic domain of a GPI.

44. The antibody according to claim 43 wherein said GPI inositolglycan domain comprises the structure

EtN-P-(Manα1,2)-6Mα1, 2Mα1, 6Manα1, 4GlcNH_2α1-*myo*-inositol-1,2 cyclic-phosphate

or derivative or equivalent thereof wherein EtN is ethanolamine, P is phosphate and M is mannose.

45. The antibody accorfding to claim 43 wherein said GPI inositolglycan domain comprises the structure

NH_2-CH_2-CH_2-PO_4-(Manα1-2) 6Manα1-2 Manα1-6Manα1-4GlcNH_2-6*myo*-inositol-1,2 cyclic-phosphate

or derivative or equivalent thereof.

46. A pharmaceutical composition comprising the antibody of any one of claims 43-45.

47. A method of inhibiting, halting or delaying the onset or progression of a mammalian disease condition characterised by a parasite infection said method comprising administering to said mammal an effective amount of an antibody as claimed in any one of claims 43-45.

48. Use of an antibody according to any one of claims 42-45 in the manufacture of a medicament for inhibiting, halting or delaying the onset or progression of a disease condition characterised by the infection of a mammal by a parasite.

49. A method for detecting, in a biological sample, an immunointeractive molecule directed to a microorganism said method comprising contacting said biological sample with amolecule comprising said microorganism GPI inositolglycan domain or a derivative or equivalent thereof and qualitatively and/or quantitatively screening for said GPI inositolglycan domain-immunointeractive molecule complex formation.

50. A method for detecting, monitoring or otherwise assessing an immune response directed to a microorganism in a subject said method comprising contacting a biological sample, from said subject, with a molecule comprising said microorganism GPI inositolglycan domain-immunointeractive molecule complex formation.

51. The method according to claim 49 or 50 wherein said molecule is a modified GPI molecule or derivative or equivalent thereof and which modified GPI molecule comprises insufficient lipidic domain to induce or elicit an immune response directed to a GPI lipidic domain.

52. The method according to claim 51 wherein said modified GPI molecule is the inositolglycan domain portion of GPI or derivative or equivalent thereof.

53. The method according to claim 51 or 52 wherein said modified GPI molecule is a modified parasite GPI molecule or derivative or equivalent thereof.

54. The method according to claim 53 wherein said parasite is *Plasmodium*.

55. The method according to claim 54 wherein said *Plasmodium* is *Plasmodium falciparum*.

56. The method according to claim 55 wherein said modified *Plasmodium falciparum* GPI molecule is a *Plasmodium falciparum* GPI inositolglycan domain.

57. The method according to claim 56 wherein said GPI inositol glycan domain comprises the structure

ethanolamine-phosphate-(Manα1,2)-Manα1,2Manα1,6Manα1,4GlcN-*myo*-inositol phosphoglycerol

or derivative or equivalent thereof.

58 The method according to claim 56 wherein said GPI inositol glycan domain comprises the structure

X1 - X2 - X3 -X4 - ethanolamine-phosphate-(Manα1,2)-Manα1,2Manα1,6Manα1,4GlcN-*myo*-inositol phosphoglycerol

wherein X1, X2, X3 and X4 are any 4 amino acids, or derivative or equivalent of said GPI inositolglycan domain.

59. The method according to claim 56 wherein said GPI inositolglycan domain comprises a structure selected from:

EtN-P-[Mα2]Mα2 Mα6 Mα4Gα6Ino
EtN-P-[Mα2][G]Mα2 Mα6 Mα4Gα6Ino
EtN-P-[Mα2][X]Mα2 Mα6 Mα4Gα6Ino
EtN-P-[Mα2][EtN-P]Mα2 Mα6 Mα4Gα6Ino
EtN-P-Mα2 Mα6 Mα4G

Mα2 Mα6 Mα4G
EtN-P-Mα2 Mα6 M
EtN-P-[Mα2][G]Mα2 Mα6 Mα4G
EtN-P-[Mα2][X]Mα2 Mα6 Mα4G
EtN-P-[Mα2][EtN-P]Mα2 Mα6 Mα4G
Mα2 [Mα2][G]Mα2 Mα6 Mα4G
Mα2 [Mα2][X]Mα2 Mα6 Mα4G
Mα2 [Mα2][EtN-P]Mα6 Mα4G
Mα6 Mα4Gα6Ino
Mα2 Mα6 Mα4Gα6Ino
Mα2 [Mα2]Mα6 Mα4Gα6Ino
Mα2 [Mα2][G]Mα6 Mα4Gα6Ino
Mα2 [Mα2][X]Mα6 Mα4Gα6Ino
EtN-P-[Mα2][G]Mα2 Mα6 M
EtN-P-[Mα2][X]Mα2 Mα6 M
EtN-P-[Mα2][EtN-P]Mα2 Mα6 M
Mα2 [Mα2][G]Mα2 Mα6 M
Mα2 [Mα2][X]Mα2 Mα6 M
Mα2 [Mα2][EtN-P]Mα6 M
Mα2 Mα6 M
Mα6 Mα4G
EtN-P-[Mα2][G]Mα2 M
EtN-P-[Mα2][X]Mα2 M
EtN-P-[Mα2][EtN-P]Mα2 M

or derivative or equivalent thereof wherein EtN is ethanolamine, P is phosphate, M is mannose, G is non-N-acetylated glucosamine, [G] is any non-N-acetylated hexosamine, Ino is inositol or inositol-phosphoglycerol, [X] is any other substituent, α represents α-linkages which may be substituted with β-linkages wherever required, and numeric values represent positional linkages which may be substituted with any other positional linkages as required.

60. The method according to claim 56 wherein said GPI inositolglycan domain is synthetically generated.

61. The method according to claim 60 wherein said synthetic GPI inositolglycan domain comprises the structure

EtN-P-(Manα1,2)-6Mα1, 2Mα1, 6Manα1, 4GlcNH$_2$α1-*myo*-inositol-1,2 cyclic-phosphate

or derivative or equivalent thereof wherein EtN is ethanolamine, P is phosphate and M is mannose.

62 The method according to claim 61 wherein said synthetic GPI inositolglycan domain comprises the structure

NH$_2$-CH$_2$-CH$_2$-PO$_4$-(Manα1-2) 6Manα1-2 Manα1-6Manα1-4GlcNH$_2$-6*myo*-inositol-1,2 cyclic-phosphate

or derivative or equivalent thereof.

63. A modular kit comprising one or members wherein at least one member is a solid support comprising a GPI molecule as defined in any one of claims 48-61.

64. A method for analysing, designing and/or modifying an agent capable of interacting with an anti-GPI glycan immunointeractive molecule binding site, which immunointeractive molecule is identifiable utilising the diagnostic methodology defined in accordance with any one of claims 48-61 said method comprising contacting said immunointeractive molecule or derivative thereof with a putative agents and assessing the degree of interactive complementarity of said agent with said binding site.

65. The use of the agent developed in accordance with the method of claim 64 in the method of any one of claims 1-22 or 47-62, the composition of any one of claims 28-42 or the use of any one of claims 23-27.